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Subject: Fw: hydraulic fracturing in the news

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With national politics in gridlock, drilling opposition goes local

Mike Soraghan and Ellen M. Gilmer, E&E reporter Energywire Published: Thursday, November 8, 2012

The battlefield of the shale drilling debate has moved from the corridors of Congress, past the statehouses, to the country's town halls and city clerks.

Tuesday's election results highlighted the shift in the debate over the drilling technique that many call fracking. Nationally, the results provided little clarity on drilling, because Congress is gridlocked and President Obama neutralized the issue by trying to accommodate both drillers and environmentalists.

But in Longmont, Colo., environmentalists won and drillers took a drubbing. Nearly 60 percent of the voters in the Denver suburb voted to ban hydraulic fracturing (EnergyWire, Nov. 7). They rejected a \$400,000 campaign by national industry groups and large independent drilling companies to head off just such a result.

The industry also spent big in Mansfield, Ohio, but failed to convince voters there to vote against a ban on injection of drilling waste in the city (EnergyWire, Nov. 7). Similar measures passed in Ferguson Township, near State College, Pa., and Broadview Heights, Ohio, near Cleveland.

The scattered, small-city victories highlight an increasingly important strategy among green groups. Activists in Longmont worked with an organizer from Food & Water Watch, a national anti-drilling group, whose efforts were quantified as \$9,000 worth of in-kind contributions.

The supporters in Mansfield, Ferguson Township and Broadview Heights worked with the Pennsylvania-based Community Environmental Legal Defense Fund. The legal fund has walked many communities through the process of asserting residents' rights to clean air and water. The group has organizers in Pennsylvania, New England and Washington state.

"It's not a movement yet," said Eric Belcastro, Pennsylvania organizer for the group. "But I do expect there to be more [interested] communities."

Environmentalists have lobbied Congress unsuccessfully to pass increased federal regulation for several years, but failed. Green groups have written off most state governments as too beholden to the oil and gas industry. So they say local governments are the most effective place to turn opposition to drilling into action.

"Because Congress is not acting, local governments have acted," said one Washington-based environmental activist.

The strategy is being picked up by more mainstream national groups. The Natural Resources Defense Council recently launched its Community Fracking Defense Project to provide support to cities that want to add new restrictions to drilling within their borders (EnergyWire, Sept. 20).

Industry groups are very aware of the trend and have been developing more lobbying and public affairs operations outside Washington.

"It does have a political influence, though I question how long it will last," said Tom Shepstone, a businessman and drilling supporter in Honesdale, Pa. He's an example of the trend. After speaking in support of drilling in northeast Pennsylvania, he joined up with Energy in Depth, a public affairs campaign of the Washington-based Independent Petroleum Association of America.

"It's pure politics," Shepstone said of the local bans and moratoria. "They know they're not legal."

In some places, like New York, drilling companies have been losing challenges to such local restrictions.

But many local restrictions face legal headwinds. The Pennsylvania Legislature specifically tried to block cities from zoning out drilling operations. State officials in Ohio have noted that they have authority in the area Mansfield voted to regulate.

In Longmont, a legal fight is nearly certain. Democratic Gov. John Hickenlooper and the Colorado Oil and Gas Conservation Commission are already suing the city to overturn a ban on drilling and fracking in residential areas. Drilling supporters warn the city is also likely to draw suits from those blocked from profiting from their oil and gas rights.

But even if they lose in court, green groups expect that the effects will spread beyond the borders of the jurisdictions involved, and force state governments to address the complaints of drilling critics.

"Local organization has an impact," said Mark Schlosberg, national organizing director of Food & Water Watch. "When legislators see things going on in their communities, they take notice."

That could be the case in Colorado. State legislators from the Longmont area have already been pushing bills to give local governments more say in drilling, and the lopsided margin in Longmont gives them momentum going into next year's legislative session. The Democratic takeover of the state House, giving Democrats control of both chambers, also helps their cause.

"Industry spent that money not only to defeat it, but to inoculate themselves from having to deal with it again and again," said Denver political consultant Eric Sondermann. "Since they failed, the pressure is certainly going to dial up."

Water pollution from shale wells is major concern for Pa. homeowners -- study

Energywire Published: Thursday, November 8, 2012

Concerns over water contamination from shale gas wells could lead property owners located near such wells to suffer a major loss in value, according to a new report from economists at Duke University and the nonprofit research institute Resources for the Future (RFF).

The study, which looked at property values of all homes in Washington County, found that Pennsylvania homeowners who rely on local groundwater for drinking saw up to a 24 percent cut in their property values if they are within a mile and a quarter of a shale gas well.

For those who pipe in their water, values rose nearly 11 percent, likely due to lease payments from gas drillers and freedom from worries about polluted water, the report says.

"The perception of how much risk there is of groundwater contamination from fracking is tremendous," said RFF fellow Lucija Muehlenbachs. Fracking refers to hydraulic fracturing, the process drillers use to draw oil and gas from tight shales. The technique involves high-volume injections of chemical-laden fluid into those formations.

The Marcellus Shale Coalition, the drilling industry's top trade association in Pennsylvania, dismissed the study.

"Making sweeping assessments based on a narrow data set may help advance a certain narrative, but the facts are clear.

Safe, job-creating American natural gas development is bolstering our region's economy," coalition spokesman Steve Forde said in an emailed statement.

An earlier study on county home values found that drilling had less of an impact on property values. Researchers from Ohio State University measured a 4 percent drop in property values for households that draw water from a private well within a mile of a shale gas well. That study looked at a narrower time period -- about two years, rather than five.

The Duke and RFF researchers plan to continue their work by taking a broader look at property values throughout Pennsylvania (Sean Cockerham, Miami Herald, Nov. 6). -- PK

Analysts predict Obama's second-term approach to exports, fracking, climate

Energywire Published: Thursday, November 8, 2012

Energy companies could face rising costs if President Obama uses the early days of his second term to toughen regulations on producing and burning natural gas, coal and oil, according to analysts.

During his campaign against Republican challenger Mitt Romney, who promoted expanding drilling and allowing states to determine their own rules for the oil and gas industry, Obama slowed fossil fuel regulations. That strategy might have been the key to the president's victories in energy-rich Ohio and Pennsylvania.

But now that the election has come to a close, Obama is expected to reprioritize energy studies and proposed regulations.

Environmental groups are pushing Obama and other Democrats to crack down on hydraulic fracturing as lobbying efforts to push Congress to fight climate change wane.

"It's going to be a rougher second term for oil and gas given the way the environmental debate is going and the diminished incentive Obama has to protect oil and gas after his last election is behind him," said Robert McNally, a former White House energy adviser to President George W. Bush.

Among the issues the Obama administration is expected to take up is the question of whether to export new natural gas finds to countries with which it has free-trade agreements. The Energy Department this year delayed research on the economic impacts of gas exports, but even if that study eventually shows limited effects, any president would struggle to win approval for such a plan.

"Are we about supporting domestic industries, about the energy industry or about just low energy prices for American citizens?" said Sarah Emerson, the head of Boston-based Energy Security Analysis Inc. "I'm not convinced either Obama or Romney would do anything on any of this."

Until a decision is made, investors could hesitate to fund renewable energy projects or even to choose among fossil fuel development options.

Another struggle will be the passage of a carbon tax, which many Republicans would reject. Climate scientists, on the other hand, have strengthened their calls for such a policy after the deadly impacts of Sandy, a superstorm that has been linked to climate change.

With Republicans in control of the House and the U.S. economy still in recovery, major climate legislation is unlikely to pass.

As a result, U.S. EPA will look to move forward with its own greenhouse gas regulation efforts, said Whitney Stanco, an energy policy analyst at the Washington Research Group.

EPA is also expected to soon release two reports on fracturing that could foreshadow the Obama administration's approach to overseeing drillers' use of the technique over the next four years (Timothy Gardner, Reuters, Nov. 7). -- PK

Voters in Colorado City Approve Ban On Hydraulic Fracturing, Waste Storage Pits

By Tripp Baltz BNA Daily Environment Report

DENVER—Voters in Longmont approved a ban Nov. 6 on the use of hydraulic fracturing to extract oil, gas, and other hydrocarbons from drilling operations within city limits, almost surely inviting a lawsuit by the state.

The citizen's initiative (Question 300), which amends the City of Longmont Home Rule Charter, was approved by about 59 percent of voters, according to unofficial results from the Boulder and Weld county clerks.

In addition to banning hydraulic fracturing within city limits, the measure prohibits open storage pits or disposal of solid or

liquid wastes created in connection with hydraulic fracturing, including flowback and produced wastewater and brine.

Hydraulic fracturing, or fracking, is the high pressure injection of water, sand, and chemicals into shale formations deep underground to release natural gas and oil. Opponents of the process express concerns about its potential to pollute drinking water supplies and harm air quality. Flowback and produced wastewater are by-products of fracking.

Question 300 was pushed by an organization named "Our Health, Our Future, Our Longmont," which described itself as "a group of neighbors working together to protect our quality of life by promoting a community that is a sanctuary from oil and gas exploration."

The Longmont City Council previously had imposed a moratorium on new drilling permits within city limits in response to residents' concerns about fracking and to give the city time to update its regulations. Longmont then developed its own rules governing oil and gas operations in the city. The city council lifted the moratorium with the approval of the new rules.

Colorado sued the city in July, saying the city's new rules were preempted by state law and citing the state Oil and Gas Conservation Commission as the proper regulator of drilling and oil and gas extractive activities (147 DEN A-16, 8/1/12).

State Likely to Sue

Prior to the election, Gov. John Hickenlooper (D) warned that approval of Question 300 would most likely prompt the filing of an additional lawsuit against Longmont.

Carolyn Tyler, spokeswoman for Colorado Attorney General John Suthers (R), said the office did not have a comment on a possible additional lawsuit.

But Michael Bellmont, spokesman for Our Health, Our Future, Our Longmont, told BNA Nov. 6 that the group fully expects a new lawsuit by the state. He said the group viewed the city's revised oil and gas rules as "not truly protective" and nothing more than "suggested" guidelines for oil and gas operators.

"The citizens, with their overwhelming passage of 300, clearly do not believe those city regulations are adequate to protect public health and safety," he said.

By Tripp Baltz

For More Information

The language of Question 300 is available at <http://ourlongmont.org/charter-amendment/>.

Black shale lithofacies prediction and distribution Pattern analysis of middle Devonian Marcellus Shale in the Appalachian Basin, northeastern U.S.A

by Wang, Guochang, Ph.D., West Virginia University, 2012, 242 pages; AAT 3530347

Abstract (Summary)

The Marcellus Shale, marine organic-rich mudrock deposited during Middle Devonian in the Appalachian basin, is considered the largest unconventional shale-gas resource in United State. Although homogeneous in the appearance, the mudstone shows heterogeneity in mineral composition, organic matter richness, gas content, and fracture density. Two critical factors for unconventional mudstone reservoirs are units amenable to hydraulic fracture stimulation and rich of organic matter. The effectiveness of hydraulic fracture stimulation is influenced by rock geomechanical properties, which are related to rock mineralogy. The natural gas content in mudrock reservoirs has a strong relationship with organic matter, which is measured by total organic carbon (TOC). In place of using petrographic information and sedimentary structures, Marcellus Shale lithofacies were based on mineral composition and organic matter richness and were predicted by conventional logs to make the lithofacies ' meaningful ', ' predictable ' and ' mappable ' at multiple scales from the well bore to basin.

Core X-ray diffraction (XRD) and TOC data was used to classify Marcellus Shale into seven lithofacies according to three criteria: clay volume, the ratio of quartz to carbonate, and TOC. Pulsed neutron spectroscopy (PNS) logs provide similar mineral concentration and TOC content, and were used to classify shale lithofacies by the same three criteria. Artificial neural network (ANN) with improvements (i.e., learning algorithms, performance function and topology design) was utilized to predict Marcellus Shale lithofacies in 707 wells with conventional logs. To improve the effectiveness of wireline logs to predict lithofacies, the effects of barite and pyrite were partly removed and eight petrophysical parameters commonly used for a conventional reservoir analysis were derived from conventional logs by petrophysical analysis. These parameters were used as input to the ANN analysis.

Geostatistical analysis was used to develop the experimental variogram models and vertical proportion of each lithofacies. Indicator kriging, truncated Gaussian simulation (TGS), and sequential indicator simulation (SIS) were compared, and SIS

algorithm performed well for modeling Marcellus Shale lithofacies in three-dimensions. Controlled primarily by sediment dilution, organic matter productivity, and organic matter preservation/decomposition, Marcellus Shale lithofacies distribution was dominantly affected by the water depth and the distance to shoreline. The Marcellus Shale lithofacies with the greatest organic content and highest measure of brittleness is concentrated along a crescent shape region paralleling the inferred shelf and shoreline, showing shape of crescent paralleling with shoreline. The normalized average gas production rate from horizontal wells supported the proposed approach to modeling Marcellus Shale lithofacies. The proposed 3-D modeling approach may be helpful for (1) investigating the distribution of each lithofacies at a basin-scale; (2) developing a better understanding of the factors controlling the deposition and preservation of organic matter and the depositional model of marine organic-rich mudrock; (3) identifying organic-rich units and areas and brittle units and areas in shale-gas reservoirs; (4) assisting in the design of horizontal drilling trajectories and location of stimulation activity; and (5) providing input parameters for the simulation of gas flow and production in mudrock (e.g., porosity, permeability and fractures).

Water news: EPA – New App and website lets users check health of waterways anywhere in the U.S. EPA October news releases – water issues. <http://savethewater.org/category/misc-water-issues/page/2/>

FSTRAC 1995. Summary of state and federal drinking water standards and guidelines. 1993-1995. U.S. Environmental Protection Agency. Office of Science and Technology. Office of Water.

NY anti- fracking candidates fared poorly at polls

Associated Press State Wire: New York (NY) - Thursday, November 8, 2012

Author: MARY ESCH Associated Press

ALBANY, N.Y. (AP) — Anti- fracking sentiment in the Southern Tier was felt at the polls this week when candidates opposed to drilling were beaten up and down the ballot after intense campaigns, some that were framed as referendums on shale gas development.

In the 22nd Congressional District, Republican Richard Hanna, an incumbent whose district was redrawn, beat Dan Lamb, a first-time candidate who was endorsed by New York Residents Against Drilling. In another redrawn district, the 23rd, Democratic challenger Nate Shinagawa lost by about 10,000 votes to incumbent Tom Reed. Shinagawa was also endorsed by opponents of hydraulic fracturing , or fracking , for natural gas.

In the Broome County executive race, Democrat and anti-drilling activist Tarik Abdelazim lost to incumbent Debbie Preston, a strong drilling supporter.

Anti- fracking candidates also fared poorly in local town races in the Southern Tier region near the Pennsylvania border, where shale gas drilling is most likely to begin if Gov. Andrew Cuomo allows it. New York has had a moratorium on shale gas drilling since 2008, when regulators began an environmental review of fracking , which releases gas from rock by injecting a well with millions of gallons of chemically treated water.

Regulators contend that overall, water and air pollution problems related to gas drilling using hydraulic fracturing are rare, but environmental groups and some scientists say there hasn't been enough research on those issues.

Drilling opponents in Broome County, a likely target for drillers, pushed for a transformation of the political landscape at the local level in hopes that a change in town boards could keep fracking out. Numerous town boards around the state have banned or placed moratoriums on drilling, but their authority to do so is being challenged in a state appellate court.

In the town of Sanford, drilling opponent Brian Stevens lost 661 to 219 against incumbent Town Supervisor Dewey Decker, a landowner hoping for gas wells on his farm. In nearby Vestal, incumbent Steve Milkovich led anti- fracking candidate Paul Logalbo 5,264 to 5,009 on Wednesday, but Logalbo said absentee ballots may decide the race.

In the town of Union, three candidates endorsed by New York Residents Against Drilling lost to incumbents.

It's unclear how much weight voters put on the fracking issue compared to other concerns such as jobs and taxes. But the Joint Landowners Coalition of New York, which endorsed pro-drilling candidates, called the election results "a clear mandate. The voters have spoken in favor of natural gas development for upstate New York."

Karen Moreau, executive director of the New York State Petroleum Council, also called the election results a victory for gas drillers. "The results from last night's election in the Southern Tier should serve as a clear call for action in Albany to create jobs through safe natural gas development," Moreau said.

Anti- fracking groups focused their post-election comments on races in other parts of the state where winning candidates had taken a stand against fracking while not making it a central theme.

Sue Rapp of Vestal Residents for Safe Energy, which opposes fracking , said pro- fracking groups should not take the election results as a referendum in favor of drilling.

"All these election results mean is that big money is still a big factor in our electoral process," said Rapp, who said the gas industry and related businesses supported Preston and other drilling boosters. "We believe that the majority of residents understand that we are not ready for fracking anywhere in New York state."

DEP responds to water testing allegations

Herald-Standard (Uniontown, PA) - Thursday, November 8, 2012

Author: Rachel Morgan, Shalereporter.com

HARRISBURG - The state Department of Environmental Protection is denying allegations that it does not fully test residential drinking water for contamination from commercial oil and gas drilling operations.

DEP Secretary Michael Krancer Tuesday refuted reports that the DEP had developed certain test result codes in order to "manipulate data."

Last week, state Rep. Jesse White, D-Cecil Township, disclosed deposition testimony that the DEP, in its analysis of residential drinking water, is not reporting all the chemicals discovered in test results because the department does not consider the substances related to waste water from gas drilling.

White cited the Sept. 26 deposition of the DEP Bureau of Laboratories technical director, Taru Upadhyay, in the Environmental Board Hearing case of a group of Washington County residents against Range Resources.

Loren Kiskadden of Amwell Township, one of the homeowners, claimed that the DEP's report regarding his water contamination complaint was inaccurate and incomplete. According to Upadhyay's deposition, Kiskadden's water was found to contain zinc, nickel, cobalt, molybdenum, titanium and boron. These results, however, were not included in his water contamination report.

Upadhyay said the lab also found acetone, chloroform and T-butyl alcohol in Kiskadden's water, the latter of which is known to be used in fracking fluid. The DEP has said these findings were from lab error and ruled that Kiskadden's water was not contaminated as a result of nearby fracking , which was occurring 3,000 feet from his home.

Upadhyay said in her deposition that the DEP used computer codes called suite codes that intentionally left out a portion of test results for residents concerned their water had been contaminated by nearby drilling.

The suite codes were listed as 942, 943 and 946.

In a letter to White Tuesday, Krancer defended the DEP's practice: "The code used to report tested parameters for an investigation of potential impact to a water supply from oil and gas operations was first developed in 1991 and has been used consistently and successfully for decades."

Using these suite codes, the DEP in one case tested for 24 contaminants but listed only eight of those in the report given to a resident who requested the analysis. Those substances were barium, calcium, iron, potassium, magnesium, manganese, sodium and strontium.

The same report did not include results for silver, aluminum, beryllium, cadmium, cobalt, chromium, copper, nickel, silicon, lithium, molybdenum, tin, titanium, vanadium, zinc and boron because, Krancer wrote, the levels of these additional metals were "extremely low" in this particular case.

"None exceeded a primary or secondary Maximum Contaminant Level (MCL) for drinking water," he wrote. "Silica, one of the additional parameters mentioned, is one of the most common compounds found in our natural environment. Therefore, finding silica - particularly at these low levels - doesn't inform DEP about whether a water supply is adversely affected by oil- and gas-related activities."

Krancer wrote that Suite Code 942, which was developed in 1991, tests for the following: pH, chloride, alkalinity, calcium, hardness, manganese, conductivity, magnesium, iron, total dissolved solids, barium, sodium, potassium and strontium.

"The DEP's oil and gas program personnel have determined the relevant parameters to detect contamination from oil and gas related activities," he wrote.

"The analysis suites reflect this effort and were revised in 2010, (SAC 946,) well after Marcellus unconventional drilling

began."

Also in the Washington County case, the deposition of DEP water quality specialist John Carson revealed that he was not aware that using the suite codes allowed the lab to report back to him only a portion of the water contamination results.

The DEP did not answer specific questions regarding how Suite Code 942 is different than Suite Code 946. DEP spokesman Kevin Sunday on Tuesday said only, "as discussed in (Krancer's) letter, SAC 942 was revised in 2010 in developing SAC 946."

White, however, said Tuesday that Suite Code 942 reports results for eight metals, while Suite Code 946 reports results for 11 metals. White also said that Kiskadden's water was tested twice - once in 2011 and once in 2012 - both using the older code, Suite Code 942.

Krancer's letter also made no mention of the 2009 study, "Sampling and Analysis of Water Streams Associated with the Development of Marcellus Shale Gas," which links these unreported metals with fracking .

The study, prepared by the industry-funded Marcellus Shale Coalition and the Gas Technology Institute, with input by the DEP, sampled water at 19 locations, both before and after fracking .

The study found aluminum, boron, cadmium, chromium, copper, lead, lithium, molybdenum, nickel, tin, titanium, thallium and zinc in the flow-back water after fracking . In a previous interview, Sunday would not confirm that the unreported metals were unrelated to Marcellus drilling, or fracking .

The study's author, Thomas Hayes of the Gas Technology Institute, said Tuesday that these metals cannot be definitely connected with fracking .

"They're at such low levels that it's hard to say what aspect of the drilling operation they arose from actually," he said. "When you have metals as low as what the report shows, these are not problematic metals. There's a certain unease of people with their water, in view of new industrial activities that are occurring around them."

Heavy metals detected in water could come from a number of industrial sources, especially considering Pennsylvania's heavily industrial history, Hayes said, and these new industrial activities - such as fracking , even that occurring just 3,000 feet from someone's residence - are "most probably not related to what they are detecting in their water. "

In his letter, Krancer didn't address testing method 200.7. The DEP Bureau of Laboratories is accredited by the National Environmental Laboratory Accreditation Program. According to a letter from attorney Kendra Smith of Smith Butz, LLC, a lawyer in the Washington County case, that accreditation requires the DEP to use testing method 200.7, which stipulates a test for all 24 metals.

"Our staff are professionals and know what to look for to determine the cause of possible water contamination," Krancer wrote in the letter.

But White is not convinced.

"(The DEP) needs to be addressing these questions, not attacking those who are asking them," he said. "They can't answer our specific issues. At the end of the day, that's what it boils down to - they're not giving everybody all their test results. There's really no excuse for that."

Colorado State University Obtains \$1.4 Million DOE Grant to Improve Water Management During Shale Oil and Gas Production

Targeted News Service (USA) - Thursday, November 8, 2012

FORT COLLINS, Colo., Nov. 7 -- Colorado State University issued the following news release:

Ken Carlson, a civil engineering professor at Colorado State University, will work with Noble Energy Inc. on a new \$1.4 million U.S. Department of Energy grant to optimize water management associated with Noble's oil and gas production in the Denver-Julesburg Basin in Weld County.

The two-year project, awarded through DOE's Research Partnership for Sustainable Energy in America, aims to assess and improve water acquisition, transportation and disposal.

Carlson and his partners will work to develop computer modeling and online training materials in partnership with industry. He expects that the project will also benefit communities by reducing truck traffic, air emissions and use of water

resources. The study will develop tools that will assist industry in siting and designing water treatment plants that are an essential part of the drive to recycle oil and gas related wastewater.

"This is driven by efficiency and if the industry's more efficient with water use, there's less risk of environmental impact," he said. "Another benefit of recycling is a reduction of stress on agriculture water and a reduced risk of regional water depletion."

Carlson notes, "Optimizing management of water during drilling and hydraulic fracturing could mitigate other environmental impacts including ecological degradation due to excessive truck traffic and the associated dust and land disturbance.

"There are 19,000 active wells in Weld County and most produce some water. Do we have 100 water treatment plants? Do we have one? Is it better to use some water for reuse in industry and other for agriculture? The study will develop industry targeted geographic information system (GIS) based tools that can be used to assess the logistics of water use, transportation, reuse and disposal."

"This is the kind of public-private partnership that we support in Weld County where we have to balance the economic benefits of industry with environmental impacts on our communities," said Weld County Commissioner Barbara Kirkmeyer. "We look forward to the results of Dr. Carlson's research."

"Our corporate purpose is Energizing the World, Bettering People's Lives," said Ted Brown, Senior Vice President - Northern Region of Noble Energy. "As we continue to increase activity in the DJ Basin, we seek solutions to maximize efficiencies while minimizing impacts. Our ongoing partnership with CSU is key in achieving this goal, and living up to that corporate purpose."

"Working together with environmental groups, industry leaders and scientists, Colorado State can act as an objective third-party to understand the complexities of the energy industry and communicate those complicated issues to the general public," Carlson said. "We hope this collaboration will provide a unique opportunity to protect Colorado's water resources while also enabling economic growth from the boom in oil and gas development in the region."

Kirkmeyer is the chair and Carlson is the co-director of the Colorado Energy Water Consortium, a partnership in northern Colorado that includes government, industry, environmental groups, agricultural interests and CSU leaders working together to solve water issues associated with oil and gas drilling development including hydraulic fracturing .

Carlson is an expert on water management associated with oil and gas drilling and pollutants that can affect drinking water supplies. Also collaborating on the DOE study from CSU are Tom Bradley, an assistant professor of mechanical engineering who is an expert in systems management, and Kimberly Catton, a research scientist in civil engineering with extensive GIS experience.

About Noble Energy

Noble Energy is a leading independent energy company engaged in worldwide oil and gas exploration and production. The company has core operations onshore in the U.S., primarily in the DJ Basin and Marcellus Shale, in the deepwater Gulf of Mexico, offshore Eastern Mediterranean, and offshore West Africa. Noble Energy is listed on the New York Stock Exchange and is traded under the ticker symbol NBL. Further information is available at www.nobleenergyinc.com.

Fracking debate called complex

Times Leader, The (Wilkes Barre, PA) - Thursday, November 8, 2012

Author: MATT HUGHES mhughes@timesleader.com

WILKES-BARRE - More divides backers and opponents of natural gas extraction in the Marcellus Shale than disagreements over the safety of its technical processes or its potential economic benefit; people's homes, ways of life and social identity hang in the balance, according to ethnographic researcher Simona Perry.

"This has become much more than just a technical or economic issue," Perry said Wednesday. "The issue has become embedded in the beliefs, attitudes and perceptions around the local and notion of a culture, of what a place means and what health means."

Perry is an applied anthropologist who for the past three years has been studying how Northeastern Pennsylvania residents perceive the natural gas development happening around them, in conjunction with Rensselaer Polytechnic Institute in Troy, N.Y. and her own consulting firm in Maryland.

She spoke at a lecture hosted by the Institute for Energy and Environmental Research at Wilkes University about the

preliminary findings of a pilot study into perceptions of the industry in Bradford County, which she called "the geographic epicenter of shale gas development in Pennsylvania to date."

Her research is grounded in interviews and focus groups with landowners, farmers, gas workers and others; community psychology surveys; analysis of storylines in national and local news coverage, archival research and other inductive research techniques. Such research is important, Perry said, in finding real solutions to the challenges the industry's presence poses, which the polarization of perspectives about domestic drilling has made all the more daunting.

"I see the fracking debate as something that could go on forever, because it is so entrenched in the pro-gas, anti-gas rhetoric," she said. "Somehow that needs to be broken down."

While new to the region, Perry said much about the boom has been seen before.

Proprietary, sometimes hazardous chemicals have been used in hydraulic fracturing since the process' inception decades ago, and the tax incentives, public subsidies and regulatory exemptions that have allowed the shale gas boom follow a long history of political influence by the fossil fuels industry.

What is new about the shale gas boom, and what has most affected residents of the communities it touches, Perry said, has been the enormous scale and rapid pace of development, its close proximity to private homes, workplaces, churches, schools and other social centers, and the larger storyline of energy independence and climate change surrounding domestic gas development.

"Individuals that are living in the midst of this type of development ... are being asked to sacrifice, everything in some cases, for some greater good," Perry said. "And this did not seem to be a concern for most people; in fact it's a source of great pride. But for others, they are concerned that they have no assurances that the benefits of the sacrifice will outweigh the risks."

Previous studies of resource boomtowns undergoing rapid economic development, primarily in the western United States, identified trends with regards to social organization, quality of life, family and social ties, local government and economics, as well as in the reactions of community residents to those changes.

They identified four distinct stages of boomtown attitudes, Perry said -- enthusiasm, uncertainty, near panic and fear, and adaptation and recovery. A similar pattern appears to be unraveling in Bradford County, she said.

"It's very similar to what those previous studies show," Perry said. "...All that's played out and even some of the recovery has played out, people's adaptations to all this."

The social science research suggests local communities should plan for the ways that extractive industries like gas drilling may exacerbate divides in communities, including "ever-widening disparities between rich and poor, women and men, young and old, and even how we define what prosperity as well as poverty look like."

"I think the next step is to stop debating and to solve these problems," Perry said.

NORTHWEST ART CENTER LECTURE EXAMINES OIL IMPACT ON NATIVE CULTURAL LANDSCAPES

US Fed News (USA) - Thursday, November 8, 2012

MINOT, N.D., Nov. 6 -- Minot State University issued the following news release:

Calvin Grinnell, historian for the Tribal Historic Preservation Office of the Mandan Hidatsa Arikara Nation, will present "The Impact of Oil Development on Cultural Landscapes" on the Northwest Art Center lecture series Nov. 14 at 7 p.m. in Aleshire Theater, Minot State University. The lecture is one of a number of events planned in observance of Native American Cultural Celebration at MSU Nov.13-15.

Grinnell's presentation will outline the role of the Tribal Historic Preservation Office in protecting the cultural resources of the Mandan Hidatsa Arikara Nation as energy resources are developed.

Well pad construction, pipelines and access roads are major physical impacts to the landscape, according to Grinnell. The Tribal Historic Preservation Office strives to protect ancient burial sites and rock formations, as well as natural features such as creeks, streams and Lake Sakakawea. Considered a "grandfather" to the Hidatsa, the waters of the Missouri have now increased in value for their role in the "fracking" process, said Grinnell. The lecture will explore some possible outcomes of energy development.

In addition to his work with the Tribal Historic Preservation Office, Grinnell is vice-president of the State Historical Board of

North Dakota. He narrated a recently released documentary, "The People of the Upper Missouri: The Mandans," produced by the State Historical Society of N.D. Grinnell is collaborating with Joseph Jastrzembski, MSU associate history professor, on a Mandan language and oral traditions reservation project.

The lecture is free and open to the public. An informal reception will follow the presentation.

For more information about activities scheduled during Native American Cultural Celebration, visit www.minotstateu.edu.

For any query with respect to this article or any other content requirement, please contact Editor at htsyndication@hindustantimes.com

Research and Markets: Marcellus Shale in the US Report - Gas Shale Market Analysis 2012-2020

Business Wire - Wednesday, November 7, 2012

Author: Research and Markets Laura Wood, Senior Manager. press@researchandmarkets.com U.S. Fax: 646-607-1907 Fax (outside U.S.): +353-1-481-1716 Sector: Exploration and Production

Research and Markets (http://www.researchandmarkets.com/research/22jdb3/marcellus_shale) has announced the addition of GlobalData's new report "Marcellus Shale in the US, 2012 - Gas Shale Market Analysis and Forecasts to 2020" to their offering.

Marcellus Shale Production to Increase despite Fracking Protests

Natural gas production from one the of the US's fastest growing plays, the Marcellus Shale, will climb ever higher in the face of widespread environmental and safety concerns, predicts industry analysts in this new report.

The company's latest research says that gross production from the play exploded from 80.2 billion cubic feet equivalent (bcfe) in 2009 to 1,072.3bcfe in 2011, and is set to reach 4,861bcfe in 2015 before finally stabilizing in 2020 at a massive 7,685.1bcfe.

Hydraulic fracturing , or fracking , is a process that has sparked controversy across the world, due to potential risks including ground water contamination and the compromise of air quality, and was the focus of 2010 Oscar nominated documentary, Gasland.

The Marcellus Shale runs through New York and Pennsylvania, amongst other states, and while numerous wells have been drilled across the latter, opposition from the public and some political figures in New York led to the initiation of a drilling moratorium in November 2010 - a freeze on fracking that currently remains in place.

Drilling activity in the Marcellus Shale mainly takes place in Pennsylvania, and as of March 9, 2012, the total number of drilling permits issued in this area stood at 11,772, according to the Pennsylvania Department of Conservation and Natural Resources.

Chesapeake is the number one company in the Pennsylvania section of the shale, producing 193 bcfe last year alone. Talisman Energy USA Inc. came second with 155 bcfe, while Cabot Oil & Gas Corp and Range Resources Appalachia LLC were third and fourth, with 138 bcfe and 115 bcfe, respectively.

This report provides insight into existing and potential exploration and development activities in the Marcellus Shale play.

This report was built using data and information sourced from proprietary databases, primary and secondary research, and in-house analysis conducted by The authors's team of industry experts.

Scope

- An overview of the oil and gas exploration in the Marcellus shale play.
- Discussion of the major issues and drivers affecting the shale gas exploration in the Marcellus shale.
- Information on the drilling and exploration activities in the different counties of Pennsylvania such as Bradford, Lycoming, and Green.
- An overview of the competitive landscape of the shale gas exploration in the Marcellus shale, detailing major companies operating in the region.
- Current exploration and production statistics of the Pennsylvania, West Virginia, and New York states in the US Marcellus shale play. The report also provides forecast for Marcellus shale production from 2012-2020.
- Discussion on the coverage and overview of operations in the Marcellus shale play.
- Information on the major mergers and acquisitions in the Marcellus shale play during 2007-2012.
- Details of the major infrastructure developments in the play.

- Discussion of the cost per well and finding and development costs in the Marcellus shale.
For more information visit http://www.researchandmarkets.com/research/22jdb3/marcellus_shale

Source: GlobalData

Energy changes can help fight fracking

Daily Star, The (Oneonta, NY) - Wednesday, November 7, 2012

Author: The Daily Star

Energy changes can help fight fracking

There are many ways to show your opposition to shale-gas development. And sometimes doing the right thing costs less, too.

Check how much you pay per kilowatt-hour. If you are a NYSEG customer, consider switching your electricity provider to Energy Cooperative of America — Renewables. By switching, you will create market demand for cleaner energy; encourage developers to build more renewable generation facilities in New York state; and send a strong message to Albany that Southern Tier residents support clean energy and do not want to encourage shale-gas development in our region.

NYSEG's standard option sources its energy as follows: Natural gas, 44 percent; nuclear, 25 percent; hydro, 16 percent; coal, 11 percent; oil, 2 percent; solid waste, 1 percent; biomass, less than 1 percent; and wind, less than 1 percent.

Energy Cooperative of America's 100 percent renewable electricity program sources its energy from: hydro, 44 percent; biomass, 29 percent; and wind, 27 percent.

You can do the right thing for New York state and our planet. To switch to Energy Cooperative of America or for more information, call (800) 422-1475 or go to www.ecamerica.org.

Southern Tier residents who oppose pipelines and horizontal hydrofracking are raising their voices, joining together and making themselves heard. Gov. Cuomo and the DEC keep count of letters, phone calls, petition returns and percentages of a town's population who consciously choose renewable energy. These are all benchmarks when they make decisions on which counties get "sacrificed" to shale-gas development.

We must keep the pressure on the state to enact a statewide ban on horizontal hydrofracking . That is the surest way we can protect all of New York state from the devastating impacts of shale-gas extraction.

And make sure you shut the lights off when you leave the room.

Tammy Reiss Unadilla

Colorado city bans fracking

Daily Times, The (Farmington, NM) - Wednesday, November 7, 2012

LONGMONT, Colo. (AP) — Longmont voters have approved a ban on oil and gas fracking and the storage of fracking waste in city limits.

The city charter amendment bans hydraulic fracturing , or " fracking ," a process used by oil and gas drillers to crack rock deep below ground.

Supporters of the ban say the practice is environmentally risky, while opponents, including state officials, say the measure will bring lawsuits over regulation of mineral rights.

According to the Longmont Times-Call (<http://tinyurl.com/cpftu6o>), state law allows cities to set standards on how and where drilling operations are conducted, but not a total ban.

Voters league to host forum on fracking

Herald-Palladium, The (St. Joseph, MI) - Wednesday, November 7, 2012

BERRIEN SPRINGS - " Fracking : Truth & Consequences" is the title of the League of Women Voters of Berrien and Cass Counties' meeting on natural gas hydrofracturing in Michigan.

The event will be 6:30 p.m. Tuesday at Berrien RESA, 711 St. Joseph Ave., Berrien Springs. This meeting is free, open to the public and does not require reservations.

A panel of experts will discuss the pros, cons, myths and truths about fracking . They include, from the industry, Luke Miller of Miller Energy; from government Bill Mitchell, Michigan Department of Environmental Quality; and environmental group Drew YoungeDyke of the Michigan League of Conservation Voters.

The moderator will be Suzanne Dixon, League of Women Voters of Michigan Natural Resources chair. Questions will be taken from the audience.

Michigan's Lower Peninsula sits on a major natural gas formation called the Antrim Shale.

The Antrim "play," the richest source of natural gas, spans the upper part of the peninsula and includes some of the most beautiful scenery in Michigan.

To date some 9,000 wells have been drilled in this area.

A critical element in fracking is water and, unlike many parts of the country, Michigan has lots of water.

For more information on League activities go to lwvbcc.org.

Study measures fracking worries - Home values fell or rose depending on water source

News & Observer, The (Raleigh, NC) - Wednesday, November 7, 2012

Author: Sean Cockerham ; McClatchy Newspapers

By Sean Cockerham McClatchy Newspapers

WASHINGTON Property owners near shale gas wells are liable to suffer a major loss in value because of worries over water contamination, according to economists from Duke University and the nonprofit research organization Resources for the Future. Their study found Pennsylvania homeowners who use local groundwater for drinking lost up to 24 percent of their property value if they are within a mile and a quarter of a shale gas well.

But the news was far better for neighbors who get water piped in. They saw values rise by nearly 11 percent, likely because of lease money from gas drillers without worries about polluted water as a negative impact, the researchers found.

The study is among the first attempts to measure the impact on property owners of the shale gas boom sweeping the nation. It comes as the need for new regulations is being hotly debated and shale gas critics allege people are getting sick from hydraulic fracturing , or fracking , the process in which high-pressure water and chemicals are injected underground to free up the natural gas in shale rock.

There has been no scientific consensus determining that fracking pollutes groundwater. But the fear is enough to drive down property values, suggests the study, which was recently released by the nonpartisan National Bureau of Economic Research after being completed this summer. The researchers said the drop in values was driven by public perception instead of any data showing contamination.

The study was dismissed by the Marcellus Shale Coalition, the drilling industry's top trade group in Pennsylvania. A spokesman responded to the study by saying overall property values have gone up in shale areas and drilling brings jobs and tax revenue.

Longmont Makes History as First Colorado City to Ban Fracking

Targeted News Service (USA) - Wednesday, November 7, 2012

LONGMONT, Colo., Nov. 7 -- Food & Water Watch issued the following news release:

Today is a historic day for the city of Longmont, Colorado. Nearly 60 percent of Longmont voters approved an amendment to the city's charter to prohibit hydraulic fracturing , more commonly known as fracking , and disposal of waste products connected with the process within city limits.

For more than six months Longmont and its citizens have been threatened, bullied and out-spent by the oil and gas industry. Longmont's victory over this highly industrialized and dangerous oil and gas extraction process signals to communities throughout the state and the nation that they can and will prevail over state officials who answer to the oil and gas industry rather than to their constituents.

According to Michael Bellmont, a member of Our Health, Our Future, Our Longmont (Our Longmont), "We have shown that Big Oil money does NOT always win and that our constitutionally guaranteed right to health, safety, and protection of property is NOT for sale. We proved that ordinary citizens with very little money but a lot of determination, intelligence,

passion and boot leather can prevail."

Over 100 volunteers worked in hot summer days to gather the necessary signatures to place the measure on the ballot. Over 8,200 signatures were submitted, well over the 5,700 required to move the measure to today's ballot. Also, more than 200 citizens contributed the funds necessary to carry out the Yes on 300 campaign. The opposition raised over a half-million dollars to oppose Question 300. All of their funds came from the oil and gas industry and their trade associations. Not one Longmont resident contributed.

"The people of Longmont have made history: they have chosen to ban fracking," said Sam Schabacker, a Longmont area native and Mountain West Regional Director for Food & Water Watch, the national consumer group who supported Our Longmont's efforts. "Longmont residents were not frightened away or fooled by the oil and gas industry's attempt to buy the election, to the tune of \$500,000, through deceptive and threatening TV commercials, full-page newspaper advertisements and multiple mailers. Hopefully this citizen-led effort will inspire other communities to stand up and protect their health, safety and property against the risky practice of fracking as well.

Our Health, Our Future, Our Longmont, a group of concerned citizens from throughout Longmont, believes that Longmont has a right to protect the public health, safety, and welfare of our community. By protecting the health, safety, and welfare of our citizens, we will preserve our economic vitality, our home values, our water, parks, wildlife, lakes, trails, streams, open space, recreational areas and our quality of life for ourselves and future generations.

Research and Markets: Proppant Market - By Type (Fracturing Sand, Resin Coated & Ceramic Proppant) - Global Trends & Forecasts to 2017

Business Wire - Tuesday, November 6, 2012

Author: Research and Markets Laura Wood, Senior Manager. press@researchandmarkets.com U.S. Fax: 646-607-1907 Fax (outside U.S.): +353-1-481-1716 Sector: Advanced Materials

Research and Markets (http://www.researchandmarkets.com/research/xsnrk5/proppant_market) has announced the addition of the "Proppant Market - By Type (Fracturing Sand, Resin Coated & Ceramic Proppant) - Global Trends & Forecasts to 2017" report to their offering.

Hydraulic fracturing is propagation of fractures through layers of rock using pressurized fracturing fluid. This technique is primarily used in the extraction of resources from low permeability reservoirs such as shale gas, tight gas, and unconventional liquids; which are difficult to recover through regular drilling procedures.

In this process fracturing fluid is used. It consists of water, proppant, chemical additives, and guar gum. Proppant is the most integral constituent of the fracturing fluid after water. Proppant material keeps the generated fractures propped open and helps continued oil and gas recovery.

The hydraulic fracturing market is mainly concentrated in North America; hence the demand for proppant is largest here, many leading oil field service companies operate. Hence, proppant production is also much bigger than rest of the world. All the big oilfield service companies are operating in the U.S. There are several important players in North American proppant market such as Cadre Proppants (U.S.), Momentive (U.S.), Saint Gobain Proppants (U.S.), Carbo Ceramics (U.S.), and many other small companies in frac sand business.

While the North American hydraulic fracturing market is nearly reaching maturity, Rest of the World's (ROW) market is still in its infancy stage. However, ROW has significant share in global proppant manufacturing. Proppants are exported from manufacturing centers such as China, Russia, Brazil, and India to the demand center of North America.

For more information visit http://www.researchandmarkets.com/research/xsnrk5/proppant_market

Fracking can hurt property values of nearby homes with wells, study suggests

McClatchy Washington Bureau (DC) - Tuesday, November 6, 2012

Author: Sean Cockerham, McClatchy Newspapers

WASHINGTON - Property owners near shale gas wells are liable to suffer a major loss in value because of worries over water contamination, according to economists from Duke University and the nonprofit research organization Resources for the Future. Their study found Pennsylvania homeowners who use local groundwater for drinking lost up to 24 percent of their property value if they are within a mile and a quarter of a shale gas well.

But the news was far better for neighbors who get their water piped in. They saw values rise by nearly 11 percent, likely because of lease money from gas drillers and no worries about polluted water, the researchers found.

The study is among the first attempts to measure the impact on property owners of the shale gas boom sweeping the nation. It comes as the need for new regulations is being hotly debated and shale gas critics allege people are getting sick

from hydraulic fracturing , or fracking , the process in which high-pressure water and chemicals are injected underground to free up the natural gas in shale rock.

There has been no scientific consensus determining that fracking pollutes groundwater. But the fear is enough to drive down property values, suggests the study, which was recently released by the nonpartisan National Bureau of Economic Research after being completed this summer. The researchers said the 24 percent drop in home values was driven by public perception instead of any actual data showing contamination.

"The perception of how much risk there is of groundwater contamination from fracking is tremendous," said Lucija Muehlenbachs of the nonpartisan Resources for the Future, who conducted the study with colleague Elisheba Spiller and Chris Timmins, an economics professor at Duke University.

The researchers looked at property values of all homes in Washington County, Pa., near Pittsburgh. It's an area at the heart of the shale gas revolution. They found just over 200 homes within a mile and a quarter of a shale gas well.

About half the homes were on piped water. Researchers saw an increase in value in those homes. The other half relied on water wells that drew from local groundwater, and they had a significant loss in value. The researchers suggested that loss could lead to an increase in the likelihood of foreclosure in areas experiencing the rapid growth of hydraulic fracturing .

The researchers suggested their finding "provides added impetus for regulators to protect groundwater under hydraulic fracturing sites and for industry to increase transparency and voluntary action to reduce water contamination concerns."

The study was dismissed by the Marcellus Shale Coalition, the drilling industry's top trade group in Pennsylvania. A spokesman responded to the study by saying overall property values have gone up in shale areas and drilling brings jobs and tax revenue.

"Making sweeping assessments based on a narrow data set may help advance a certain narrative, but the facts are clear. Safe, job-creating American natural gas development is bolstering our region's economy," coalition spokesman Steve Forde said in an emailed statement.

It won't be the last study on the contentious subject, and the researchers themselves are starting to take a broader look at all of Pennsylvania. There already is some competing data.

Ohio State University researchers came out with an earlier study, also in Washington County near Pittsburgh. They looked at a narrower time period - about two years rather than five - and suggested drilling had less of an impact on property values.

The Ohio State researchers found about a 4 percent drop in property value for households that rely on private well water within a mile of a shale gas well. The drop was bigger and lasted longer for more rural homes surrounded by farmland, according to the Ohio State researchers. They saw a dip of more than 7 percent in value.

"We find evidence that households are negatively impacted by shale gas exploration activity, but this impact largely depends on the proximity and intensity of shale activity and diminishes over time as risk perceptions adjust following the (end) of exploration activity," they found.

Majority urge board to renew ban on fracking

Evening Tribune, The (Hornell, NY) - Sunday, November 4, 2012

Author: Neal Simon; The Spectator

ALFRED - The Alfred Town Board will be equipped with firsthand knowledge of how residents feel about an extension of the municipality's moratorium on hydrofracking when it meets in regular session later this week.

More than 75 town residents Thursday night attended a hearing on a law that would extend the ban for 12 months. The current moratorium is due to expire late next month. Officials were non-committal Thursday when asked if the board will vote on the extension when it meets at 7 p.m. Thursday, Nov. 8, or wait until the regular meeting in December.

Either way, a majority of residents who attended a 90-minute public hearing at the Alfred Station Fire Hall last Thursday night were clear about what they want the board to do - extend the ban for another year.

An impromptu show of hands at the conclusion of Thursday's meeting showed that only about five or six people at the hearing oppose the ban on hydrofracking .

Town Supervisor Tom Mansfield said the board will listen to every view.

"We will consider each and every opinion," Mansfield said.

Several speakers at the hearing said the risks to water safety outweigh the economic benefits of allowing deep shale gas drilling in Alfred.

"Why would we want to take chances?" one person asked.

Mark Klingensmith said to this point, local bans have survived lawsuits.

He pointed to bans in Dryden and Middlefield, which survived initial challenges in court.

Both of those cases have been appealed, Klingensmith said.

According to published reports, more than 30 local governments in New York have enacted bans on gas drilling and more than 80 have put moratoriums in place.

Geologist Dave Kindle, while acknowledging a split in the geological community over the safety of hydrofracking, said the board would be "foolish" to move away from the ban at this time.

Town officials have worked on two tracks this year when it comes to hydrofracking.

While the ban has been in place, the Alfred Planning Board has studied road preservation laws and written one for Alfred. The town board has not decided on a final version of the road law.

"A good reason to extend the moratorium would be that we still don't have a zoning law the way we want it and we still don't have a road preservation law (completed) either," Councilwoman Mary Stearns said last month.

Political Panel; Interview with Robert, Edward Skidelsky; Debate on Fracking

CNN - Sunday, October 28, 2012

Show: FAREED ZAKARIA GPS

Author: Fareed Zakaria, Candy Crowley

FAREED ZAKARIA, CNN HOST: This is GPS, the Global Public Square. Welcome to all of you in the United States and around the world. I'm Fareed Zakaria.

The debates are done. The race is heading for the final stretch and it is still all about the economy. So we'll start with a great panel to talk about the American economy. What is actually going on?

Then, you've often heard that fracking is controversial. Why? We have a debate to help you think it through.

And do you think you have enough money? What would be enough? We'll have a fascinating discussion on the subject with Lord Robert Skidelsky, Britain's most prominent economy historian, on how to answer those questions.

And why in the world did the nation of Mali get more mentions in this week's foreign policy debate than Japan, Mexico or all of Europe?

But, first, here's my take: The International Monetary Fund's latest World Economic Outlook makes for gloomy reading. Growth projections have been revised downward almost everywhere, especially in Europe and the big emerging markets like China.

And yet, when looking out over the next four years, coincidentally the next presidential term, the IMF projects that the United States will be the strongest of the world's rich economies.

U.S. growth is forecasted to average 3 percent, much stronger than that of Germany or France at 1.2 percent or even Canada at 2.3 percent.

Increasingly, the evidence suggests that the United States has come out of the financial crisis of 2008 in better shape than its peers because of the actions of its government.

Perhaps the most important cause of America's relative health is the Federal Reserve. Ben Bernanke understood the depths of the problem early and responded energetically and creatively.

The clearest vindication of his actions has been that the European Central Bank, after charting an opposite course for three years with disastrous results, has now adopted policies similar to the Fed's and, thus, averted a potential Lehman-like collapse in Europe. Kenneth Rogoff and Carmen Reinhart, the leading experts on financial crises, argue that the United States is performing better than most countries in similar circumstances in history.

Consumers are paying down debt and consumer confidence is at its highest levels since September 2007. Every American recovery since World War II has been led by housing, except this one.

But, finally, housing is back. Two weeks ago, Jamie Diamond, the chief executive of JP Morgan Chase, declared that housing had turned the corner and predicated that, as a consequence, economic growth in 2013 would be so strong that the Fed would have to raise interest rates.

Corporate profits are at an all-time high as a percentage of gross domestic product and companies have \$1.7 trillion in cash on their balance sheets.

American exports, which have climbed 45 percent in the past four years, are at their highest level ever as a percent of GDP.

The key to long-term recoveries from recessions is reform and restructuring and U.S. businesses have been quick to respond. Government intervention, believe it or not, has assisted this process with banks, with auto companies and even in housing.

Banks had to undergo stress tests and had to raise capital. The Economist Magazine, which had initially opposed the auto bailout, reversed itself because of the manner in which General Motors and Chrysler were forced by the government to cut costs and become competitive.

Now, all these good signs in the economy come with caveats. Europe continues to weaken, the fiscal cliff looms ominously. But compared with the rest of the industrialized world and with the arc of other post bubble recoveries, the United States is ready for a robust revival.

This is partly because of the dynamism of the U.S. economy, but also because of the timely and intelligent actions of the Fed and the Obama administration.

The next president will reap the rewards of work already done. So it would be the ultimate irony if, having strongly criticized almost every measure that contributed to these positive trends, Mitt Romney ends up residing over what he would surely call the Romney Recovery.

For more on this, go to cnn.com/fareed for a link to my Washington post column and let's get started.

Let's get straight to our terrific panel to talk about the economy and, obviously, a little politics as well. Joe Klein is Time's political columnist.

Amity Shlaes is director for the Four Percent Project at the George W. Bush Institute and the author of the forthcoming, "Coolidge: A Biography of America's 30th President.

Ken Rogoff, whom I just mentioned, is a Professor of Economics at Harvard University and Chrystia Freeland is the editor of Thomson Reuters Digital and the author of the new book, "Plutocrats."

Welcome back to all of you.

So, Ken, the piece I mentioned, you wrote a -- you and Carmen Reinhart wrote a piece almost trying to correct what a couple of Romney advisors have written about how the U.S. was doing.

And you said, look, compared with other big financial crises that lead to recessions, we're actually doing pretty well. Fair?

KEN ROGOFF, PROFESSOR, HARVARD UNIVERSITY: Yes, that's a fair characterization of what they said and what we said. I mean it's fair game to say we can do better, we have a plan where the economy's going to grow better.

But if you're going to evaluate what happened, was it a bad recovery, was it a good recovery, I think you have to compare it to deep financial crisis.

This was not a plain vanilla recession and you have to compare it to deep financial crises we've had in this country, which

don't happen very often, and other countries around the world.

And if you go by that metric, the United States has not done so badly. I mean I think part of the argument is they say well, we're not growing that fast now. But the other side of the coin is we didn't fall that far at the beginning.

I mean what people are really interested in is are we better off than we were four years ago and not did we get a lot better in the last year having sunk mightily.

So I think that was sort of what the debate was about. Carmen Reinhart nor I have been backing either of the candidates nor advising them privately.

But we felt that -- especially since our work we being cited again and again and again, not just in op-eds, but in press briefings that we heard back from, we just felt we had to set the record straight.

ZAKARIA: Fair to say we're doing pretty well compared to other countries in similar situations?

AMITY SHLAES, DIRECTOR, THE FOUR PERCENT PROJECT AT THE GEORGE W. BUSH INSTITUTE: Well, you -- we're better than the worst. Is that good enough? That would be the question. What's interesting is about what Ken is saying is deep financial crisis, yes, it is part of a great pattern that he and Carmen have analyzed and highlighted.

However, our deep financial crisis -- it sounds a little exonerating, doesn't it? Deep financial crisis, nothing the average person could do about it, it has to do with political policy.

For example, vis-a-vis, housing, if our federal government hadn't guaranteed all housing everywhere both through Fannie Mae and Freddie Mac, the FHA and so on, we would have had less of a crisis.

The whole world believed in our housing. So I disagree just with the exonerating tone. This was the result of policy that voters supported that was erroneous. It wasn't inevitable.

ROGOFF: Yes, but a lot of it happen before, you know -- earlier I mean, to be fair.

SHLAES: Right, but it was -- no, no, it wasn't inevitable like weather.

ROGOFF: Right.

SHLAES: We tend to -- when you talk about financial cycles as kind of, oh, that's the weather, we can't do -- this was a result of policy by both parties.

ZAKARIA: Chrystia?

CHRYSTIA FREELAND, EDITOR, THOMSON REUTERS DIGITAL: Well, sure, that's absolutely true, but it's not -- it is policy by both parties. So Republicans, of course, like to talk about the housing, which Democrats were very supportive of, wrongly I believe.

But Democrats like to talk about and they should talk about bank regulation. And, you know, if you want to talk about regulatory failure, if you want to talk about government failure, surely the deregulation of the financial sector up to 2008 is one of the great moments of failure.

ZAKARIA: But, Joe, let me ask you a question about the politics of this. Whether or not, you know -- will voters really understand the Ken Rogoff argument that this is a, you know, deep financial crisis causes overleveraged consumers and balance sheets get out of whack and it takes a while before all this straightens out.

They're just looking at it and saying Obama's been president for three years and he hasn't fixed anything.

JOE KLEIN, POLITICAL COLUMNIST, TIME MAGAZINE: I think that's right, but I think that they might understand it if it were Bill Clinton explaining it to them.

I think that Obama really has been awful at explaining his policies and explaining the state of the economy for the last three or four years.

SHLAES: I'd like to just say, again, policies do matter deeply. Example, for the viewer, next year it's predicated we'll go into recessions again if the fiscal cliff is not addressed and we do go over it. These are decisions that have to be made by

lawmakers before Christmas time or the New Year in regard to tax and sequester and spending.

It's there in the books and it's probably accurate. I think we've let ourselves off the hook when we compare ourselves to Europe. It's not so great just to be less bad than the others which is where we are.

ZAKARIA: So there's a lot there. Let's talk about the fiscal cliff. Is it going to happen?

KLEIN: No, it's not. I mean, you know, I've been doing this for 43 years and I suppose I should be a cynic by now, but I'm not.

I'm very optimistic that this is going to be handled because a good part of the blockage was the fact that Mitch McConnell set, as his goal, the fact that Obama wouldn't be reelected.

Now, if Obama gets reelected, that blockage is passed and John Boehner is going to have to think about his future as speaker, whether he wants to stand with his Tea Party or whether he wants to stand with the vast, moderate majority of people in this country who believe that there has to be some revenues and there have to be some cuts and there have to be some entitlement reforms.

There's a rational, sane, middle road out there and if Romney wins, then he will have to deal with the Democrats in the Senate, which he'll want to do.

And he will have to say to his right wing, as he has implicitly over the last three or four weeks, that no, guys, we're not going to have this extreme policy.

And as for tax rates matters, I mean I think we all lived through the great depression of the 1990s after Bill Clinton raised taxes and the great depression of the 1980s after Ronald Reagan raised taxes, especially on business, three times.

ZAKARIA: All right, we're going to have to stop ...

(UNKNOWN): Do we do (inaudible) about that?

ZAKARIA: No, we're going to have to stop, take a break. When we come back, we'll talk, inevitably, about all this, but also going forward what's going to get this economy moving again.

(COMMERCIAL BREAK)

ZAKARIA: And we are back with Joe Klein, Amity Shlaes, Ken Rogoff and Chrystia Freeland.

So, term two, for whoever it is, a term two for Obama, a term one for Romney, Chrystia, what do you think will get America growing at 3 percent or more? FREELAND: Well, let me pick up on what Joe has said and tell you what is the truth that dare not speak it's on Wall Street right now and behind, actually, I think, a lot of the Wall Street support for Romney.

I think a lot of people on Wall Street are hoping and they actually believe that if Romney were elected, he would discover his inner Dick Cheney.

And that the way that the fiscal cliff would get ...

ROGOFF: That's a frightening thought.

FREELAND: Right, no, and the way the fiscal cliff would get resolved is that Romney would say yes to tax cuts and would say actually deficits don't matter right now, let's make growth a priority and because it was a Republican president that, therefore, you would have the Congress much more willing to go along.

Wall Street, at this moment, would see that as a very positive scenario, sort of stimulus by stealth.

ROGOFF: What I worry about is that neither candidate's really, if they win, going to get to execute their vision that they're going to be having -- you know it's like you marry someone, but there are a lot of unruly relatives you never quite realize were there and, you know, coming out of the woodwork.

And I worry -- I actually think both men acquitted themselves quite well in the debates. But the point is they're in this larger environment of what is going to go on.

And I worry we're going to see muddling through instead of clear-cut tax reform, clear-cut infrastructure program, clear-cut ways to improve education.

ZAKARIA: Joe, when you traveled around, I remember this was a couple of years ago, you did a --

KLEIN: I do it every year.

ZAKARIA: But you did a series of wonderful articles. I think it was before the midterms for Time in which you said, you talked to a lot of the Midwest middle class and you found that the -- China came up ten times as often as Afghanistan.

KLEIN: Twenty.

ZAKARIA: Twenty times as often as Afghanistan. And when you look at the -- what an average, middle class, American family is facing, particularly kind of, you know, working people who work in factories, they're up against probably a generation of this kind of wage competition and possibly wage deflation because of China and things.

Do you -- what do you think happens to the politics of America if that middle class is not appreciably five, six, eight years from now?

KLEIN: Well, we're heading toward, I think, a demographic period of real difficulty as the white majority declines. And there's a fear of -- out in the middle of the country of this new America that's emerging that is so multicultural, multiethnic.

But I do think, you know, once again, I'm going to be slightly optimistic here because, you know, you and I have both written about this, we're finally beginning to understand what hasn't worked in education.

The idea that college is appropriate for everyone hasn't worked. There is a major movement on in the country to match people skills with the jobs that are out there. Vocational education's making a big comeback.

And I think that even as manufacturing jobs begin to return because our energy costs are going to be lower and labor costs are rising in Asia, I think that those are going to be skilled manufacturing jobs.

And we're on the brink now where we can figure -- we're beginning to figure out how to rejigger our education in order to meet the economy of the future.

FREELAND: I'm, sadly, going to be a little more pessimistic than you, Joe. And I think, Fareed, you have asked the most important question.

I am less worried about structural unemployment, but I am really worried about structural lousy jobs as there's a great economic paper about the lovely and the lousy jobs.

And I'm really worried that we're ending a period of structural lousy jobs. And these can be manufacturing jobs, but they're just not paying the same money that they paid. Forget about the 1950s, they're not paying what they were paying 10 or 15 years ago.

And I think we are entering a period, precisely as you say, because of this global labor market, where there is going to be a big chunk of the middle class that are the working poor.

They're going to have jobs. They're going to have jobs that we consider to be good jobs. They will have had the vocational training, but they will not be making enough money to feel good, to feel comfortable.

And what that does to the politics I think you already see. I think it makes the politics much nastier, much more divisive. There is much less a belief that you can have compromise. So I think it's quite a frightening prospect.

ZAKARIA: Amity, another big challenge, no matter who's elected, is going to be at some point we have to deal with entitlement spending. Do you think there is the political will, on either side, to actually cut spending, particularly entitlements, which is the big piece of it, not just ...

SHLAES: Oh, I actually do. I mean if we all sat here over one afternoon, we could come up with a Social Security compromise that reflected the impulses in all political parties.

Sometimes, I think we blow up, especially Social Security, we make it seem harder than it is. It's not that hard. So ...

KLEIN: So the Medicare one ...

ZAKARIA: It's economically easy, but politically.

SHLAES: It's -- right, so we need -- it's our job to convey to the viewer that it's economically easy to fix Social Security.

And if a politician tells you otherwise, from either side, that it must all be privatized or it cannot be touched because it's a Democratic holy cow, they're exaggerating so one is to view that as not insurmountable.

The health care is much more complex. But I want to mention that we all -- you know, we're talking in this very narrow band. We're concerned about Michigan, (inaudible) notwithstanding, or because of the auto bailout the unemployment is what, it's over 7, it's more like 9, the Midwest in the future there.

And just to widen our band, I'd like to offer what would happen, Dr. Rogoff, Ken, whom I admire so much, if we cut the capital gains tax to 2 percent in the United States, we would all fall off a cliff of deficit or would the U.S. grow faster and obviate some of the problems you've so well described?

ZAKARIA: All right. And that's the final word.

ROGOFF: Well, I think the answer is if we had a tax simple vacation where that issue was taken off the table is the best idea and it's outrageous that a lot of things get disguised as capital gains that are really income creating the biggest inequality.

SHLAES: so you say raise capital gains, for example, for hedge funds?

ROGORF: OH, if we didn't change anything else, absolutely. That is just criminal.

ZAKARIA: One point of agreement. Ken Rogoff, Joe Klein, Amity Shlaes, Chrystia Freeland, thanks for joining us.

Up next, What in the World. Why a little known nation, Mali, is more important than Europe, Mexico and India combined, at least according to this week's presidential debate. I'll explain.

(COMMERCIAL BREAK) ZAKARIA: Now, for our What in the World segment. In the final presidential debate, the one on foreign policy, it was interesting to note the countries that got a mention.

Iran was cited 47 times, of course, Israel 34 times and China 32 times. It was also telling there was only one mention each of Europe and Africa and none at all of India.

But I was struck by the amount of play one small country got, one that doesn't usually register on Washington's foreign policy radar, land-locked Mali, with a population of about 15 million and a GDP 1 percent that of Mexico's.

Why Mali? Here's the story, briefly. Racial Islamist groups have taken control of as much as 2/3 of Mali's territory this year, including the historic city of Timbuktu.

Among these groups is al-Qaeda and the Islamic Maghreb said to have been involved in last month's attack on the U.S. consulate in Benghazi, Libya.

Together, these radical outfits have tormented Mali. They have destroyed historic shrines, imposed a draconian version of Sharia law and gone as far as stoning and beating people who come in their way.

Now, Mali was once considered one of the few stable democracies in Africa and Mali's capital, Bamako, would normally have been able to counteract these insurgents.

But the government tripped up this year. A coup took place in March. In the aftermath, soldiers deserted the army. There are reports many even sold their equipment for money so Mali is now essentially defenseless.

Last month, the interim president called on the U.N. Security Council to help and so it seems increasingly likely there will be some kind of military intervention.

Already, a regional group called, ECOWAS, the Economic Community of West African States, is pooling together a small army. France is leading the calls for action.

It has submitted a proposal to the U.N. for Malian soldiers to be trained by the European Union. Those soldiers will then join a few thousand ECOWAS troops to retake Northern Mali. Remember, Mali was a French colony until 1960 and France continues to have trade interests in the region.

What about Washington's role? Haven't our leaders promised to go after al-Qaeda wherever it takes us? Yes, but that doesn't always mean we have to have boots on the ground.

Al-Qaeda and affiliated groups keep popping up in different parts of the world. When we suppress them in one region, they crop up elsewhere. It's a tremendous undertaking to keep following them, especially with troops. That's why it's heartening to see local and regional powers take up the fight. And Somalia, for example, Ethiopia and Kenya have been instrumental in battling the al-Qaeda linked Shabaab group. Other countries like Yemen have welcomed surgical U.S. strikes, even drone strikes, without a presence of U.S. troops.

But with or without the United States, there is a real prospect that the next war you will hear about, perhaps next years, will be fought not in Iran, but in the impoverished country of Mali. You heard it here first.

Up next, the human quest for success and money. We're all familiar with it, but how much is enough? When do you stop? We'll tell you the answer when we come back.

(COMMERCIAL BREAK)

CANDY CROWLEY, CNN ANCHOR: I'm Candy Crowley in Washington. "Fareed Zakaria GPS" will be back shortly.

But first, we've learned that New York City will suspend bus and train service starting at 7:00 p.m. due to Hurricane Sandy. We want to go meteorologist Bonnie Schneider at the CNN Weather Center in Atlanta for an update on the storm. Bonnie?

BONNIE SCHNEIDER, AMS METEOROLOGIST: Candy, the storm is definitely getting closer as it continues to work its way to the north and then make that turn back to the U.S., and that's what's so unusual about this hurricane. Of course, having a hurricane in October is unusual, as well. But this is going to be a wind and a rainmaker. We're talking about a widespread area impacted. In fact, millions of people potentially could be without power. When you look at the populations of large cities like New York, Philadelphia, and as far west as Cleveland, Ohio.

We're also looking at the threat for storm surge, this is very key because the winds are going to be strong, and we'll be looking for that water to pile up, particularly in the inner harbor areas like into New York harbor, Long Island Sound. All of these are at risk for storm surge and flooding.

You know, flooding is actually the leading killer in hurricanes. And a lot of that happens due to storm surge. So some of the rainfall totals you see are up to eight inches. But keep in mind, on the back side of the system, it's cold enough for snow. So Candy, we are looking at the threat for heavy snow in the mountains of West Virginia, as well.

CROWLEY: Wow. Big storm. Thanks, Bonnie. CNN will be covering the storm throughout the day. RELIABLE SOURCES is at the top of the hour. Now back to "Fareed Zakaria GPS."

ZAKARIA: How much is enough? Is anything ever enough? It sounds like a philosophical question, but it's also one about economics. So here's one way to approach answering it. A father and son write a book. The father is a famous economic historian. The son is a lecturer in philosophy.

I welcome Robert and Edward Skidelsky, authors of the book, "How Much Is Enough?"

What I'm struck by, Robert, in this book is it -- it's familiar. In the 19th century, there used to be many conservatives who would argue against industrialization because the feeling was this is just turning into kind of materialism, and everybody wants more, more, more, and then your great man Keynes wrote a piece in the '30s saying we're producing so much wealth that at some point everyone will have enough stuff. And they can all work for a few hours a day, and, you know, enjoy the rest of the day. Marx used to argue that as well in his own way. But it hasn't quite worked out that way for whatever reason as a predictor of how human beings will behave. We do seem to want more, more, more and more.

ROBERT SKIDELSKY, AUTHOR: We do. I think Keynes was heir to that moral Victorian tradition, in which money was regarded as a means to something, a good life. And he was the last really of economists, last generation of economists who thought in these terms and thought of economics as a moral science. And that you needed to ask always the question, enough for what, what is money for? Otherwise you are adrift. You just go on accumulating without end, without purpose. So he said enough for a good life. And he thought that technology was bringing that about, that it was actually

producing such increases in wealth that we would be able to have abundance with a fraction of the work. That people would then do it, but that bit of it hasn't come about.

ZAKARIA: Why?

R. SKIDELSKY: I think a number of explanations. One is that our society's become much more unequal than it was when Keynes was writing. And the other is I think he underestimated the force of insatiability. The relative character --

(CROSSTALK)

ZAKARIA: You end up with new needs and new wants. If you have one car, you feel like maybe it will be even more fun to have three. In the book, it seems to me -- correct me if I'm wrong -- briefly what you're saying is you need enough for a kind of good, what we would consider middle class or upper middle-class life in terms of material comforts, house, things like that. And that beyond that, the kind of constant accumulation of more stuff doesn't give you a good life. What gives you a good life is time spent with your family, building relationships, pursuing activities that you find interesting.

EDWARD SKIDELSKY, AUTHOR: Yes. Well, we break it down into seven basic goods, as we call that. These are the goods that together make up a good life -- health, respect, security, personality, harmony with nature, friendship, and leisure. So once you have enough money to enjoy these goods and once society has enough money to enjoy these goods collectively, then you have a good life.

R. SKIDELSKY: And it's insane to go on and on and on. ZAKARIA: And there's a tradeoff because in order to get more and more money, you have to sacrifice. You don't have the time for those friendships. You don't have the time for leisure. You don't have, you know, the ability to pursue that good life.

R. SKIDELSKY: In economic terms, they all have opportunity costs. Leisure has an opportunity cost, because it means when you're enjoying leisure, you're forgoing the extra income that you could be getting when you're working. And say if you're rational, you balance these things. But of course that's also an insane way of doing it. When you're poor, of course you need to work in order to get enough. When you're already rich, do this kind of calculation, and say, well, if I go to the theater, I'll -- I'll not make an extra \$100 that I would get by staying at my desk. I mean, when you're already rich, that seems to me an insane calculation.

ZAKARIA: But how do you determine -- the problem I'd say is in America nobody thinks they're rich, they're all trying to get richer.

R. SKIDELSKY: That's because they think they're not as rich as other people, and also --

ZAKARIA: Is there an objective standard you could --

R. SKIDELSKY: Well, I think the other thing that Americans worry about, and indeed many Europeans, is there's been a big increase in insecurity. They may have wealth, but how long will it last? What about their retirement? What about the cuts in services? What about their jobs? They may lose them. So there's this insecurity. And one of our basic goods is security. We believe there was more security, actually, in the '50s and '60s, certainly in terms of jobs, than there is today.

ZAKARIA: The one thing that does seem to be clear is that the research on happiness, if one can describe this as serious research, but there are lots of studies that say that what makes people happy once they have achieved some kind of middle-class status, is human relationships, ties to their families, leisure pursuits, civic activities. It's not the third car.

R. SKIDELSKY: But these are the very things that don't get into gross domestic product statistics, which are entirely about the goods that enter the market and are exchanged in the market. All these other things that give people the feeling that they're leading a good life and it contents them -- they are sort of ignored. And so the pursuit of growth as such is a highly misleading objective, because it just concentrates on a narrow segment of goods, and you always really want to ask what is growth for, what -- growth of what? Growth of what? And if you say growth of pollution, that is absolutely rubbish. That's not something you ought to be thinking about. But growth of friendship, how do you get it into GDP?

The king of Bhutan, of course, he suggests substituting gross domestic happiness as the goal of his people. Well, I can see why in a way. Because if there are lots of people that are very, very poor, and you can persuade them that they're happy, then he can keep his palaces going, and people won't get discontented about it.

So it's a bit of a -- it's a bit of a poisoned chalice, that notion of happiness. Because also, unless you're very careful, you get into a brave new world situation, where rulers make people happy by giving psychic aspirin or something like that, and then they feel idiotically happy the whole time.

ZAKARIA: Skidelsky, pere and fils, thank you very much for joining me.

Up next, shale gas has revolutionized America's economy, but is it safe? We'll have a debate on the pros and cons, coming right up.

(COMMERCIAL BREAK)

ZAKARIA: America's extraordinary natural gas boom has been made possible by an extraction method called fracking . That's the controversial process developed with the help of the U.S. government of shooting millions of gallons of water mixed with chemicals and sand down a well. When the water hits the shale rock, the rock that contains the natural gas, that rock fractures, releasing natural gas back up the well. So if it is helping to fuel our economic recovery, why is it so controversial? Let's talk to my next two guests. Abrahm Lustgarten won a Polk award for his series on fracking for Pro Publica. And Ann McElhinney is a journalist and filmmaker. She is the producer and director of the forthcoming film, "Frack Nation." Welcome.

Abrahm, let me start with you and ask you, just simply and succinctly, if you can tell me, what's the problem with fracking ?

ABRAHM LUSTGARTEN, ENVIRONMENTAL REPORTER, PRO PUBLICA: Well, there's serious scientific questions about what its impact is on the environment in three areas -- in terms of its effect on ground water deep below the surface; the wastewater that's produced and where that goes; and emissions and air pollution that results from the drilling. All of which can lead to, it seems, can lead to substantial health concerns and health impacts.

ZAKARIA: So let's take the first one then. And this is basically the fear that you contaminate the water -- or drinking water reservoirs. Ann, what is your research telling you about that?

ANN MCELHINNEY, DIRECTOR, "FRACKNATION": They've been fracking in the United States since 1947, so it's not a new method of any kind. And I suppose the quote from Lisa Jackson, the head of the EPA, who is on record as saying, according to her, she has no knowledge of one case of water contamination. So you have a situation -- like now in the United States -- where there are literally millions of fracked wells all across the country. This has been going on for a very, very long time. It's not like it is something new. We've actually seen what happens -- nothing happens. There are no cases of water contamination. And this is, as you said yourself, there, Fareed, it's an extraordinary ability now for America to extract its oil and natural gas and become energy independent. It's amazing, amazing for America. ZAKARIA: Abrahm, how do you respond to that? There has been a lot of fracking going on, hasn't there?

LUSTGARTEN: There has. The science just is not as certain as we've just heard. The fracking process has been developed in various forms over the last 50 years or so, but nothing at all like it is today, not in terms of the volume, the type of chemicals, the slick water fracturing, the horizontal drilling . Really, this is just something that's come about in the last ten years at best.

And the other thing that's dramatically different from historical drilling activity is the scale on which this is happening. The thousands and thousands of wells, the speed at which they're being drilled, and the range across the country. So it's entirely different from historically how drilling has happened.

ZAKARIA: Ann, what about that famous video in "Gasland," where the guy opens a tap and flames shoot out. The argument is that this is the methane that's come from fracking that's entered the water supply.

MCELHINNEY: Yes. It's very interesting actually, because we actually challenged the director of "Gasland" on that very issue. Because you know, it's a very dramatic moment. You see the guy light the water, it's like oh my God, if they frack in my area, this is going to happen.

Of course, what they don't tell you in that film and we confronted Josh Fox about was, has this ever happened before in America? Does water in America light? And of course, the truth is yes, it does, and it always has. That's why in the United States of America you have towns all over America called Burning Springs, because the water always lit on fire.

And why does the water in America light on fire? It lights on fire because of naturally occurring methane, which there's a lot of. And in fact, actually, while that sounds like a bad thing, it's actually really, really good news, because that means there's an abundance of natural gas and an abundance of oil naturally occurring. So, you know, what happened in "Gasland" was this was very dramatic, this scene. People across the world have seen it and been terrified by it. It's just not true.

ZAKARIA: Abrahm, the argument is that methane mixes with water naturally or perhaps somebody drilling a water well hits a reservoir of methane. This is not necessarily a product of fracking .

LUSTGARTEN: Well, I think what you're hearing is a gross generalization. Personally, I've interviewed dozens of people, both researchers and homeowners, who have, you know, dealt with methane seepage, looking at cases for example documented by the Pennsylvania Department of Environmental Protection, by the EPA itself, by other government entities, where clearly the methane released in those -- in some of those cases has been caused by drilling activity, whether fracking or drilling or cementing or some aspects of the drilling activity. So it's just not true to dismiss all of those because some methane can occur naturally in some places.

MCELHINNEY: I think the really good example is that, you know, if you think of what happened in Dimock, Pennsylvania. Dimock is always quoted as ground zero for this. Every documentarian has seemingly gone there, a lot of journalists have gone there, they've interviewed 11 litigants. There were 11 litigants who were saying that there was methane leakage into their water systems in Dimock, Pennsylvania, 11 litigants.

Well, we went to Dimock, Pennsylvania, and we found something that everyone else seems to not have found. We found 1,500 families who said the water there was always appalling, that they always had methane in the water because of the fact that the place is so rich in natural gas. They formed an organization called Enough Already. That's why we were making this film, "Frack Nation," because actually, when you think of how much 11 is out of 1,500, it's 1 percent. We're making a film for the 99 percent whose voices aren't being heard.

Mr. Lustgarten's voice gets heard. He talks about maybe, and could be, and what if and what would happen, and this article here. But very -- his citations are very, very weak.

The truth is that the evidence, if anything, is incredibly favorable, in favor of this method of extracting oil and natural gas, which is desperately needed, when America is putting itself in such danger from getting oil from countries that really hate America. So this is a very good news thing.

Of course regulation is incredibly important. And regulation is there and in place.

ZAKARIA: Abrahm, what about the argument that you have to compare natural gas to the alternative? If we didn't have fracking , if we didn't have this cheap natural gas, we would be getting our electricity from coal. Now coal is much dirtier than natural gas, almost twice the CO2 emissions. Also has, you know, effects in terms of the atmospheric disease-causing pollutants. And it also causes lots of deaths in coal mining accidents.

LUSTGARTEN: Sure. I mean, there's a lot of benefits to natural gas. I don't think that anybody really disputes that. I just think that it's also important when you look at those benefits to weigh them against some of them costs, and at least to have a very clear-eyed understanding as to what some of those costs are. There's very serious questions, and they need to be answered. And most scientific communities and government regulatory agencies looking at this agree with that.

ZAKARIA: Abrahm Lustgarten, Ann McElhinney, thanks for being with us. This is a very good, substantive, civilized debate.

Up next, why this odd-looking contraption could save thousands of lives in Afghanistan and around the world.

(COMMERCIAL BREAK)

(BEGIN VIDEO CLIP)

OBAMA: You mentioned the Navy, for example, and we have fewer ships than we did in 1916. Well, Governor, we also have fewer horses and bayonets.

(END VIDEO CLIP)

ZAKARIA: That moment from the foreign policy debate got me thinking. And it led to our question of the week. During which war did the U.S. execute its last horse cavalry charge? Was it, A, the Civil War? B, the Spanish-American war? C, World War I? Or D, World War II? Stay tuned, and we'll tell you the correct answer. Go to CNN.com/fareed for more of the GPS challenge and lots of insight and analysis. You can also follow us on Twitter and Facebook. Also remember if you miss a show, go to iTunes. You can get the audio podcast for free, or you can buy the video version. Itunes.com/fareed.

This week's book of the week is "Plutocrats: The Rise of the New Global Super Rich and the Fall of Everyone Else," by my guest today, Chrystia Freeland. This book has very interesting data on inequality, it has great reporting, fun tidbits

about the lives of the plutocrats, and very sensible policy advice about what to do about all of this.

Now for the last look. Take a look at this. From a distance it looks like a dandelion. Up close, perhaps an odd ball of toilet plungers. So what is it? It's called minecafon (ph), and it is a wind-powered land mine-clearing device. That's right. Propelled by the wind, it is meant to roll around landmine danger areas until -- [explosion].

It finds one.

Its inventor, Masud Hassani (ph), is an Afghan who has vivid memories of losing toys that flew or were kicked or thrown into landmine areas when he was growing up in the ear of war against Soviet Union. The problem goes beyond toys. Afghanistan is estimated to have perhaps ten million unexploded land mines, and more than 40 civilians are killed by these hidden explosives every month on average. So this might be a home-grown way to start fixing this problem. Necessity truly is the mother of invention.

The correct answer to our GPS challenge question was d -- the last American horse cavalry charge was in World War II. On January 16, 1942, the galloping horses of the 26th Cavalry Regiment surprised the Japanese in the Philippines and were victorious.

Now more recently, you might remember horses were also used early in Afghanistan by U.S. Special Forces, but that was not an official cavalry unit or an official cavalry charge.

Thanks to all of you for being part of my program this week. I will see you next week. Stay tuned for RELIABLE SOURCES.

Exercises in Pressure Control During Drilling

P Skalle [Google book link]

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ZaZa Energy updates Eagle Ford shale operations

Oil & Gas Journal 11/07/2012

http://www.ogj.com/articles/2012/11/zaza-energy-updates-eagle-ford-shale-operations.html?cmpid=EnlDailyNovember72012&hq_e=el&hq_m=18053&hq_l=83&hq_v=z93aae0e00

ZaZa Energy Corp. released an update on its Eagle Ford operations in South Texas where it has begun drilling its Boening A-1H well in the wet gas window in DeWitt County.

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"Strive not to be a success but rather of value." Albert Einstein